

## MEMORANDUM FOR RECORD

SUBJECT: Minutes from the Fort Detrick Restoration Advisory Board (RAB) Meeting of July 11, 2001

**1. Index of Minutes**

Items addressed at the meeting are listed below, with corresponding section numbers indicated in the column on the right.

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## **2. Meeting Opening**

Lieutenant Colonel Jeffery Springer convened the meeting at 7:30 p.m., on Wednesday, July 11, 2001, in Conference Room 3, 810 Schreider Street, Fort Detrick, Maryland.

## **3. Attendance**

### Members Present:

Lieutenant Colonel Jeffery Springer, P.E., Chief, Safety, Environment, and Integrated Planning Office (SEIPO), (Installation Co-Chairman)  
Mr. Gerald P. Toomey (Community Co-Chairman)  
Ms. Nancy Shropshire, SEIPO (Recording Secretary)  
Mr. Michael Kurtianyk, Macintosh Realtors  
Mr. Thomas Meyer, Project Manager, U.S. Army Corps of Engineers (USACE), Baltimore District  
Mr. Paul Offutt, Program Manager, Frederick County Health Department  
Mr. Douglas Scarbrough, Restoration Oversight Manager, U.S. Army Environmental Center  
Mr. Craig Toussaint, Ph.D., Community Member

### Others Present:

Ms. Helen Alexander, Local Resident  
Mr. Fred Boecher, U.S. Army Environmental Center  
Dr. Henry Erbes, Environmental Office, SEIPO  
Mr. John Fairbank, Maryland Department of the Environment (MDE)  
Mr. Joseph Gortva, Environmental Office, SEIPO  
Mr. Brent Graybill, USACE  
Mr. David Iseri, IT Corporation  
Mr. John Justice, Universe Technologies, Inc.  
Mr. Hubert Kaempf, Local Resident  
Mr. Gary Pauly, Local Resident  
Mr. John Robertson, Developer—Waverly View  
Mr. Kirk Ticknor, Project Manager, IT Corporation  
Ms. Wendy Ticknor, Spouse of Mr. Kirk Ticknor

### Members Absent:

Colonel James Greenwood, Commander, U.S. Army Garrison (USAG), and Deputy Installation Commander, Fort Detrick  
Mr. Charles Billups, Ph.D., Community Member  
Mr. Larry Bohn, Frederick County Health Department  
Mr. William Effland, Ph.D., Community Member

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Mr. Michael Gresalfi, Community Member

Ms. Helen Miller-Scott, Community Member

Mr. Dennis Orenshaw, U.S. Environmental Protection Agency (USEPA), Region III

Ms. Linda Robinson, Community Member

Mr. Stewart Taylor, Ph.D., P.E., Community Member

Mr. Thomas Wade, Community Member

#### **4. Opening Remarks and Introductions**

Lieutenant Colonel Springer announced that COL Greenwood is TDY and unable to attend this meeting. He stated that Mr. Dennis Orenshaw was also unable to attend this meeting, but will attend the next meeting. Lieutenant Colonel Springer welcomed everyone to the meeting and asked that each attendee introduce himself/herself.

#### **5. Area B Removal Action Update**

Mr. Thomas Meyer provided copies of a Fort Detrick Remedial Investigation (RI)/Feasibility Study (FS) handout (Encl 1). He displayed slide photos of the containment structure. The photos were taken in May 2001 while the structure was being split into two complete units. Inside the structure, sand was placed over previous trenching sites to avoid safety problems. In June, the two units were moved in order to continue the delineation effort outside the original location of the structure. Mr. Meyer displayed a slide with the new location of the two units and the results of pit delineation. Pits 1 and 4 do not extend much farther than the original location of the structure. Following completion of pit delineation in June, 13 additional surface samples were taken. These samples tested negative for biological pathogens. Delineation results show that the pits are deeper and significantly larger than initially envisioned. The tops of drums found in one section were 17 feet deep.

The containment units were moved completely out of the way today to allow installation of the freeze pipes. Freeze pipe installation should begin next week. After the pipes are installed, the containment structure and engineering controls will be put into place. The crew changed the treatment for individual small vials and bottles. The clay soil clumps in bundles, resulting in chemical reactions that can be explosive in nature. To improve worker safety, the treatment stream was adjusted to use equipment to separate larger (quart/liter, for example) vials and bottles. The remainder will be scooped up and put into a mechanical shredder. The shredding process will be done with small amounts of material (approximately 1 cubic yard or less) at a separate area. Chemical reactions, such as small explosions and fires, can occur. The workers will handle these reactions with foam and on-site firefighting equipment. This will be more manageable and much safer for the workers. In addition, this process change should increase the daily yield from approximately five cubic yards per day to approximately 20 or more, depending on the number of chemical reactions and what is required to treat them. Larger vials and bottles will be characterized separately.

In response to a question by Mr. Hubert Kaempf, Mr. Meyer stated that the angle for freeze pipe installation was changed to accommodate the larger/deeper pits. The freeze pipes will also be installed deeper—just above the bedrock. Mr. Gary Pauly stated that a specific kind of small vial was used in an assimilation counter to count radioactive samples. He cautioned that these vials could contain beta emitters and that crushing waste that contains a large number of these vials could generate an enormous amount of low-level radioactive waste that cannot be incinerated. Mr. Kirk Ticknor stated that, in accordance with the work plan, anything unusual that is encountered will be set aside and investigated. He added that anything above the disposal limits will be picked up with the radiation meter or beta meter. Mr. Gerald Toomey asked whether the crew characterized the material in the vials, and Mr. Ticknor responded that the delineation effort was to go up to, but not into, the pit. When the workers found crushed vials, they took soil samples and tested for chemicals, metals, organics, and solvents. Test results were consistent with what was expected. In response to questions about the appearance of the vials and whether the vials used in the 1960s had a different appearance, Lieutenant Colonel Springer agreed to seek information on this issue as an action item.

Mr. Meyer stated that, since the pits are so large, freeze pipes for Pit 1 will be installed first. After the freeze pipes are installed, the containment structure will be moved over Pit 1 for waste excavation. The projected schedule is:

- July-August 2001—Install freeze pipes under Pit 1.
- September 2001—Set up equipment for operations inside the containment structure.
- October 2001—Begin waste excavation.

Mr. Meyer presented a brief video of a trenching activity inside the containment structure. In this instance, a small fire started inside the trench due to air or water reaction with the chemical. The video showed blue smoke rising from the trench. Lieutenant Colonel Springer stated that a significant rain event occurred the day before and that water leaked underneath the seal of the tent and dripped into the trench. Mr. Kirk Ticknor stated that the workers saw a very small, greenish flame in the bottom of the trench—this particular flame went out on its own. As shown in the video, the workers are trained to immediately stop, cover the area with dirt to smother the flame if necessary, and then respond appropriately. Within 30 seconds, the workers began spraying fire-fighting foam in the trench. Mr. Ticknor stated that they are prepared to deal with this type of event, which is very common for an operation that involves a hodgepodge of chemicals. The command center watches the entire operation on video, making sure the situation is stable, and has immediate access by radio and phone to the Fort Detrick Hazmat team. The workers have constant radio communication with the command center.

In response to a question, Mr. Ticknor stated that the trenches were typically dug approximately 10 feet apart, moving from clean soil toward the pits. The crew came at the pits from the top, the bottom, the sides, and at an angle. One trench led to another as far as information on the best approach to delineate the pits. Two of the pits extended very close to the edge of the containment structure at its original location. Therefore, the crew split the structure, moved it

apart, went outside the boundary of the original structure, and worked inward to verify the edge of the pits. Mr. Offutt stated that no trenching was shown in the upper right-hand corner. He asked how the limit of the pit was determined. Dr. Erbes stated that this pit contained a granular material—not chemical waste. Mr. Ticknor added that the granular material and timbers found in this pit are consistent with solid waste. Mr. Ticknor also stated that the crew was able to segregate the two pits and focus on the one containing materials such as chemicals and solvents.

In response to questions about the drums found at a depth of 17 feet, Lieutenant Colonel Springer stated that based on observations of the excavation workers, indications are that the drums are intact. Iron, water, and air must all be present for rust to form. Apparently the clay at that depth is so tight that two elements (water and air) are missing, and the drums did not decay. After the workers install freeze pipes beneath the pit, they will dig up the drums and characterize the contents. Mr. Ticknor stated that historical records indicate that Trichloroethylene (TCE) and Tetrachloroethylene (PCE), also called Perchloroethylene, were buried at the site in drums. The plume data seems to substantiate this information. The containment structure and ventilation system are designed to handle worst-case scenarios caused by unknowns. Mr. Ticknor emphasized that the Army went to great lengths to protect the public during this removal action. Normally, on a project like this, there would not be a containment structure or a freeze wall. The Army took extraordinary measures to keep everything contained in the work area.

## **6. Area B Quarterly Sampling Results**

Mr. Meyer reported on sampling results for April-May 2001. Well 47D had a detection of 8 parts per billion (ppb) of TCE. No TCE was detected in residential wells. Well 47D tested positive originally and caused sampling of the residential wells. Concentrations of PCE increased in the center of the plume. The only major increase was in Well 24D, which increased from 3,100 ppb to 16,000 ppb. Distribution of the plume appeared to be similar in shape to the one for the year 2000. No PCE was detected in residential wells. Mr. Meyer reported that nothing new was found in the residential boundary wells. Chloroform was detected at very low levels in boundary wells and in Area B; however, chloroform was also detected in upgradient wells away from Area B, usually due to people trying to disinfect their wells. The PCE in Well 31D is back up to 800 ppb. Mr. Meyer presented data trends for Area B interior wells considered to be hot spots. The TCE and PCE in Well 37D are relatively steady. Well 52D showed an increase in PCE from 50 to 110 ppb. Well 57D was last sampled in November 2000. The TCE and PCE decreased in Wells 53D and 58D. Well 24D showed a decrease in TCE and an increase in PCE. Mr. Meyer stated that the numbers are bouncing around a little bit due to the nature of the way the contaminants are moving around underground. Changes occur periodically, but the numbers seem to stay within the same general range. Area B water levels showed a change for the first time in a couple of years. Groundwater elevations are up 5-10 feet over January 2001 in the eastern and central portions of Area B due to spring rain; but the general plot is basically the same.

## 7. RI Update—Areas A, B, C

**Area A:** The decision document is being staffed for signature and should be signed by the end of the fiscal year, providing authority to move forward to the remedial design to develop the monitoring plan. The next step will be to implement long-term monitoring. This action will continue the pumping that is going on now. If the tenant leaves or shuts down the system, the Army will continue the pumping, along with the monitoring. Lieutenant Colonel Springer explained that the decision document will establish the program and identify the program funds (\$980,000 spread over the next 20 years) for long-term monitoring between now and January 2022 and a review of the decision document at the end of each five years. Sampling will then be done on a routine basis for the long-term monitoring program.

**Area B:** Mr. Meyer stated that the photographic analysis study was completed in March 2001. The groundwater pilot study technology is pending funding. The quantitative ecological risk assessment is being discussed between all the agencies. Funding must be received before the plan can be implemented. The draft final plan for the dye trace study is under review. This plan is also on hold pending funding. After funding is in place, the workers will analyze the exact data points that should be included in this plan to implement it; this can be done fairly quickly. The chemical oxidation study was finalized in July 2001. Everything else is on hold pending completion of these studies. Field activities completed since the last meeting are:

- Perimeter wells surrounding Area B were sampled.
- Former employees were interviewed in order to enhance RI information. These interviews were recorded on audiotapes. Meeting minutes were written, but the tapes were not transcribed.

Mr. Meyer outlined the plan to conduct additional interviews with former employees. He stated that development of the water treatment system for the Krantz property is on hold pending installation of city water by February 2002. Mr. John Robertson provided an update that installation of city water is not going to happen within that time frame. He added that the current status is that city water supply taps will not be available to his development for three to five years. Mr. Meyer explained that the Krantz property includes one vacant house and two others located across the street. The well for the vacant house showed a hit of less than 1 ppb. Wells for the other two houses were non-detect. The Army supplies bottled drinking water to the residents. To protect the residents from any inhalation problems, the plan is to develop a private water treatment system for the water from these wells. The cost for the Army to bring in city water is prohibitive because city water is so far away. Until this meeting, the latest information was that the developer would bring city water to the area. Based on the new information, the situation must be reassessed. There has still not been a single hit on the two occupied homes.

Lieutenant Colonel Springer provided copies of a memorandum (Encl 2) signed by Major General John Parker requesting supplemental funding for the Area B-11 contamination removal project.

**Area C:** Mr. Meyer stated that the ash disposal area is being considered for an interim action to excavate the ashes using installation restoration funds. The Area C RI/FS is on hold pending funding. The U.S. Environmental Protection Agency determined that there is no risk to any ecological habitat based on current data. This determination may allow closeout of the ecological risk assessment.

#### **8. Area C Removal Action—Funding**

Lieutenant Colonel Springer stated that the U.S. Army Medical Command ruling on using environmental money for ash removal is that no other environmental money can be used. For example, compliance money was used to remove the lead from the old skeet range. The ash removal project falls under a different set of definitions, and the same pot of money can not be used for this project. If this excavation is done with money other than Environmental Restoration, Army (ER,A) funds, it has to come from operations and maintenance funds in the existing U.S. Army Garrison budget. Colonel Greenwood will make that decision.

#### **9. Area B Public/Press Visit**

Lieutenant Colonel Springer stated that, based on the schedule provided by the USACE, the visit to the Area B removal site is tentatively scheduled for the week of September 24, 2001. At that time, the freezing should be at the 90+ percent range, the containment structure will be in place above the pit to be excavated, and the equipment will be mobilized and on-hand. Due to safety concerns about large numbers of people going to the site, there is no plan to open the visit to the general public. He pointed out that part of the job of the RAB members is to represent the community and convey to the community the information shared at these meetings. People invited will include the RAB members and representatives of the press, the Pentagon, the USACE-Baltimore District, the city government, and the county government. The intent is to demonstrate the sequence of the process prior to waste removal and shipment off the site. Mr. Michael Kurtianyk pointed out that the city election primary will be on September 11, 2001, and that it might be a good idea to invite candidates as well as incumbents.

Ms. Helen Alexander expressed her concerns about the building on Fort Detrick that is sealed due to Anthrax contamination. Dr. Erbes stated that the building was decontaminated twice with the same process used to decontaminate existing biological labs. Normally, surfaces in laboratories are smooth, allowing an evaluation of whether the decontamination was successful. The problem with this building is that the interior surfaces are rough, preventing tests that are necessary to determine whether the decontamination process was 100 percent successful. Lieutenant Colonel Springer stated that the National Cancer Institute (NCI)-Frederick owns and has full responsibility for that building. Dr. Erbes added that the NCI-Frederick is currently developing a plan to deal with this issue. Lieutenant Colonel Springer agreed to provide Ms. Alexander the name and telephone number for someone at NCI-Frederick who she can contact to pursue answers to her questions.

## **10. Area B Public Information Efforts**

Lieutenant Colonel Springer stated that he briefed the status of the Area B project status to the Small Business Committee of the Frederick County Chamber of Commerce in late May. A similar briefing is scheduled for a Fort Detrick breakfast meeting on July 24, 2001, and for the Association of Realtors on August 7, 2001. Lieutenant Colonel Springer asked for suggestions on other community groups that might be interested in this briefing. Mr. Kurtianyk suggested Rotary groups and agreed to email additional information to Lieutenant Colonel Springer.

## **11. Chemical Oxidation Bench-Scale Test**

Mr. David Iseri discussed the results of the chemical oxidation bench scale tests (Encl 3) that were done to determine whether in-the-ground oxidation technology can be applied to clean solvents from the aquifer in Area B. The final report should be published within the next two weeks and available on CD-ROM at the Fort Detrick and Frederick County Libraries. Chemical oxidation was chosen since the number of potentially successful clean-up technologies are limited for Area B groundwater; the contaminants sink in the aquifer and go through fractures, making the contaminants hard to find, and the aquifer contains solution features—groundwater flow is erratic.

Chemical oxidation was successfully demonstrated at Letterkenny Army Depot, where similar site conditions exist, and represents a potentially good alternative to knock down concentrations to avoid the future risk of the contaminants leaving the site. The two oxidation processes tested are:

- Sodium permanganate direct oxidation—A solution of sodium permanganate is allowed to contact the rock and aquifer directly. The chemical directly attacks the organic contaminants, producing carbon dioxide, manganese oxide (an insoluble which drops out), and chloride in solution.
- GeoCleanse process—Hydrogen peroxide is mixed with an iron catalyst solution. This mixture reacts to form an intermediate extremely oxidizing environment to vigorously attack the organic contaminants. The reaction forms carbon dioxide, water, and chloride in solution.

The chloride is formed because these are chlorinated contaminants. Tests were performed on the two major rock types that are in the contaminated area—Cambrian Limestone and Triassic Conglomerate. The crew subjected natural faces and cut surfaces to the oxidant to determine whether there could be significant degradation of the aquifer and how much oxidant will be consumed during reaction with the rock. Rock faces were also exposed to the catalyst solution used in the GeoCleanse process (iron solution mixed with acid) because of concerns about the acid attacking the bedrock. Water samples were taken from the area where there is a high level

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of contamination and examined how effective the oxidation process, at varying concentrations, was in consuming the contaminants.

Permanganate oxidation tests at other sites have shown the potential for some natural metals to become more toxic when they are oxidized. Therefore, metal testing was performed during rock/permanganate reaction tests to ensure that use of the chemical oxidation process will not cause a problem.

Before/after photos of rock exposed to the permanganate show staining on cut and natural surfaces, but very little degradation of any of the surfaces. Bench scale tests to determine oxidant consumption by the rock consist of submerging the rock in a tub of the oxidant. With the permanganate, there was some staining and a little deterioration. The cut faces reacted more than natural surfaces. No permanganate was consumed by exposure to the natural face of the Triassic Conglomerate—deposits formed on the surface, but there was no reaction. The amount of permanganate consumed was within acceptable limits based upon experience at other sites. There was not much reaction between the rock and the oxidant in the absence of the contaminants, which is good. The goal is for the solution to react with the contaminants—not the rock. The metals analysis of the permanganate solutions did not show oxidized species from the bedrock. The crew analyzed the metals in the bedrock and found that the permanganate solutions did not contain any metals from the bedrock that were highly oxidized. Low levels of chromium were found, and it was determined that this resulted from contamination of the original permanganate by the manufacturer. If this is done in the field, pure permanganate will be used.

The oxidant technology is good because the solution will follow natural fractures, similar to the way the contaminant moves. This will treat the areas hit by the contaminants. Removal of contaminants by pumping does not provide efficient recovery/treatment because the contaminants will drop deep into the aquifer. When the permanganate was introduced to the groundwater samples, the permanganate was found to be very efficient—it destroyed the PCE and TCE to below detectable levels in less than eight hours.

The peroxide tests are different because they include the peroxide and a catalyst. Therefore, separate tests were performed to check interaction of the rock with both the acidic iron solution and the peroxide. In the presence of the acid catalyst, the exposed surfaces (natural and cut) were coated with an orange precipitate (most likely hydrous iron oxide). This precipitate is believed to help coat the rock so it does not continue to react with the acid. Some minor interaction occurred between the peroxide and both types of bedrock on cut and natural surfaces. There were no visible major changes in the rock samples, but the peroxide will degrade, over time, in the presence of the bedrock—even if there is no contaminant present. When the peroxide was introduced to the contaminated water, the contaminants were completely removed from the test groundwater under mildly acidic conditions. The pH levels and concentrations of the catalyst and peroxide used in the test indicate that conditions necessary to destroy high levels of contamination in the field can be achieved.

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Mr. Iseri stated that the bench scale test results are fairly favorable and the partnering team is assessing further pursuit of field application of this technology. Lieutenant Colonel Springer stated that he previously told the news media that this process will not proceed until after completion of the Area B removal action. The goal is to remove the source before using this technology, and funding will not be available until that time. The earliest projected date for going forward with this action is the summer of 2003.

## **12. Community Co-Chair Comments**

Mr. Toomey stated that, after almost 10 years, he thinks he can see a light at the end of the tunnel. Information is available now that clearly delineates the pits and a plan to take removal action. There is also information on oxidant technology to remove the aquifer contaminants. These actions will probably get the site as clean as possible.

Mr. Toomey noted that the memorandum signed May 11, 2001, by Major General Parker requesting supplemental funding states that the estimated volume of waste chemicals and contaminated soils increased from 550 cubic yards to 4,500—almost a nine-fold increase. Mr. Craig Toussaint pointed out that the memorandum states, “Delaying the removal action will intensify the potential of an imminent release of contaminants and pose a substantial threat to public health, welfare, and the environment.” He asked for an explanation of the sentence. Following a brief discussion, Lieutenant Colonel Springer stated that funding is prioritized based on risk and that this sentence was taken from the decision document, which was released for the general public to review and make comments. Mr. Toomey agreed that there is an imminent threat to the environment and the health and safety of the local public. He added that the removal action should proceed as quickly and safely as possible. Lieutenant Colonel Springer agreed.

Mr. Toussaint stated that he appreciates receiving the daily updates on Area B, but he has to read a lot of stuff he does not want to read just to be sure something significant did not happen. He asked whether there is a way to flag the messages to be sure that he doesn't miss a significant event. Lieutenant Colonel Springer agreed to put the word “event” or some key word in the subject line. He added that nothing exciting is expected to happen between now and September or later.

## **13. Date/Agenda Items for Next Meeting**

RAB meetings are held bimonthly on the second Wednesday of the month. The next meeting will be Wednesday, September 12, 2001, at 7:30 p.m., at Fort Detrick.

### Agenda items for the next meeting:

- Area B Public/Press Visit Schedule

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- Area B Removal Action Update
- Area A Decision Document Status
- Area B Funding—Status of Request for Supplemental Funding
- Area C Removal Action—Funding Availability
- Area B Public Information Efforts

#### **14. Meeting Closing**

The meeting was adjourned at 9:45 p.m.

Reviewed by:

//s//

Jeffery C. Springer, P.E.  
Lieutenant Colonel, U.S. Army  
Co-Chairman

Approved/Disapproved

//s//

James R. Greenwood  
Colonel, U.S. Army  
Deputy Installation Commander

Enclosures:

1. Fort Detrick RI/FS
2. Memorandum, MCHD-SI, May 11, 2001
3. Bench Scale Test Results

**DISTRIBUTION:**

Each RAB Member (w/o enclosure)

Each Meeting Attendee (w/o enclosure)